Fig. 4. *Bythocypris*? *cuneola*, J. & K., var. Carapace, showing right valve.
Fig. 5. *Bairdia curta*, M'Coy. Carapace, showing right valve.
Fig. 6. *Bairdia subelongata*, J. & K. Carapace, showing right valve.
Fig. 7. *Bairdia plebeia*, Reuss. Left valve.
Fig. 8. *Bairdia plebeia*, Reuss. Carapace, showing right valve.
Fig. 9. *Bairdia brevis*, J. & K. Left valve.
Fig. 10. *Bairdia amputata*, Kirkby. Carapace, showing right valve.
Fig. 11. *Bairdia ampla*, Reuss. Left valve.
Fig. 12. *Bairdia grandis*, J. & K. Carapace, showing right valve.
Fig. 13. *Bairdia Hisingeri*? (Münster), var. *Mongoliensis*, nov. Carapace, showing right valve.

XLVII.—*Notes on the Variation of the Genus* Arion, *Fér.*

By Walter E. Collinge, Assistant Demonstrator in Zoology, St. Andrew's University.

The diversity of opinion that at present exists as to specific and varietal forms in this genus induced me some time ago to collect a large quantity of the different species and varieties from many parts of the country for careful comparison and anatomical examination. Some *Arion empiricorum*, Fér., which are at present under observation, are of interest in that they approach a Portuguese form described some little time ago by Simroth, viz. var. *Bocagei*. From the descriptions below it will be seen that these variations are so slight that it would be absurd to name them individually; and as they are likely to occur elsewhere I now describe them, hoping thereby to save future collectors from adding to an already overburdened nomenclature.

The specimens I have were collected in Yorkshire; but allied forms have also been found in Ireland by Dr. Scharff* and at Guernsey by Mr. Brockton Tomlin†.

Arion empiricorum, Fér.

Var. *Bocagei*, Simroth.—Sides blackish, back decidedly paler or white. Portugal.

Subvar. nov.—Sides blackish, back grey; margin of sole light yellow. Ireland (*Scharff*).

Subvar. nov.—Sides blackish, back light bluish grey; foot whitish, margin of sole white. Yorkshire (*Collinge*).

* Trans. Roy. Dublin Soc. vol. iv. ser. ii. p. 560, pl. lvi. fig. 16.
† 'British Naturalist,' p. 46 (1891).

Subvar. nov.—Sides blackish, back greyish; margin of sole light brown. Yorkshire (*Collinge*).

Subvar. nov.—Animal drab colour; foot deep yellow, margin bright orange. Guernsey (*Roebuck*).

After a careful examination of a number of brown and red forms of *A. empiricorum* I am much inclined to group Mr. Roebuck's var. *brunneus* as a subvar. of var. *rufus*, L. The variety *subreticulatus*, Ckll., might also be grouped as a subvariety of var. *reticulatus*, Roebuck. There can be little doubt but that the var. *fallax*, Ckll., of *A. hortensis*, Fér., is merely a form of var. *subfusca*, C. Pfr. The var. nov. *albipes* lately described by Mr. Cockerell * is a very unsatisfactory one, being made from a single immature specimen. The white sole is such an unusual occurrence in *A. hortensis* that it is important; but specimens frequently show light-coloured soles in a young condition.

The many perplexing forms of *Arion* which are at present engaging the attention of conchologists cannot be rightly assigned to this or that species from a mere examination of the external parts, and it is to be hoped that future collectors will abstain from adding useless synonyms to the list until they obtain a better knowledge of the anatomy.

XLVIII.—*Notes on Dr. W. Kükenthal's Discoveries in Mammalian Dentition.* By Oldfield Thomas.

The two important papers by Dr. W. Kükenthal recently published †, and translated in the present number of the 'Annals' ‡, render necessary a few words on the bearing that the discoveries therein announced have on the theories of tooth-descent current here and on the Continent.

On the first and most essential question as to the origin of the present Mammalian diphyodontism, *i. e.* the possession of two more or less complete sets of teeth, a milk and a permanent set, two conflicting views have been advocated—(1.) that this diphyodontism was present in the earliest Mammalia, and has become reduced in the different orders to different degrees, the lowest orders being paradoxically the most

* 'The Conchologist,' vol. i. p. 33 (1891).
† Anat. Anz. vi. pp. 369 and 658 (1891).
‡ *Supra*, pp. 279, 285.